

## IN THE UNITED STATES PATENT & TRADEMARK OFFICE

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|-------------------------------|----------|---------------------------|-----------|
| Appln. Ser. No.:              | Filed:   | Inventor(s):              | Atty Dkt: |
| n/a                           | herewith | F. Kressman <i>et al.</i> | 1826-023  |
| Title: LIQUID CRYSTAL DISPLAY |          |                           |           |

Asst. Comm'r for Patents  
Washington, D.C. 20231-0001

### PRELIMINARY AMENDMENT

Dear Sir:

In connection with the new application filed herewith, prior to calculating the filing fee and any substantive examination, please first amend the subject application as follows, the amendments being shown in marked-up form in the appendix at the end of this paper:

#### Amendments:

1. A liquid crystal display having two opposed substrates (1), a liquid crystalline medium (2) contained between the substrates, and a plurality of electrodes (5) arranged on the substrates to produce a multiplicity of pixels (11), wherein the electrodes (5) are configured in such fashion that the pixels (11) have round contours.

2. The liquid crystal display as claimed in claim 1, wherein the electrodes (5) are configured in such fashion that the pixels (11) have roughly circular contours.

3. The liquid crystal display as claimed in claim 1, wherein the electrodes (5) possess bulging sections (6) with a rounded, outer contour, as well as connecting sections (9) linking said bulging sections in a string-type configuration, with the relative orientation of the electrodes (5) disposed on

different substrates (1) being such that their bulging sections (6) lie opposite each other, turned through about  $90^\circ$  relative to one another, and adding up to form a pixel.

4. The liquid crystal display as claimed in claim 3, wherein the bulging sections (6) form diametrically opposed sectors (7), with a sector angle ( $\alpha$ ) of at least about 90 degrees.

5. The liquid crystal display as claimed in claim 1, wherein the bulging sections (6) of the electrodes (11) which are complementary to form pixels (11) are configured in such fashion that in the presence of an offset of the substrates (1) in the two axial directions, which is due to manufacturing tolerances, pixels (11) are still producible whose outer contour includes circular sections and corners with obtuse included internal angles.

6. The liquid crystal display as claimed in claim 5, characterized in that the corners of the outer contour or the tangents applied to the corners define between them an internal angle of between  $90^\circ$  and  $180^\circ$ .

7. The liquid crystal display as claimed in claim 1, wherein the connecting sections (9) have an enlarged cross-section (10) outside an area of overlap with the opposite electrode (5).

8. The liquid crystal display according to claim 1, wherein the electrodes (5) are configured in such a fashion that the pixels (11) have a contour in the form of a polygon with more than four sides.

9. The liquid crystal display as claimed in claim 8, wherein the electrodes are configured in such fashion that the pixels (11) have a contour in the form of a polygon with rounded corners.

10. The liquid crystal display as claimed in claim 8, wherein neighboring sides of the polygon define between them an internal angle of  $\geq 100$  degrees.

11. The liquid crystal display as claimed in claim 1, wherein the electrodes (5) possess bulging sections (6) with a polygonal outer contour, as well as connecting sections (9) linking said bulging sections in a string-type configuration, with the electrodes (5) disposed on different substrates (1) being configured such that their bulging sections lie opposite each other.

12. The liquid crystal display as claimed in claim 1, wherein the pixels (11) are arranged in a raster, with the raster distance between neighboring pixels amounting to between 0.5 mm and 1 mm.

Cancel claim 13.

Please add the following new claims:

–14. The liquid crystal display as claimed in claim 3, wherein the bulging sections (6) form diametrically opposed sectors (7), with a sector angle ( $\alpha$ ) of about 90 degrees.–

–15. The liquid crystal display as claimed in claim 5, characterized in that the corners of the outer contour or the tangents applied to the corners define between them an internal angle of between  $120^\circ$  and  $180^\circ$ .–

–16. The liquid crystal display according to claim 8, wherein the electrodes (5) are configured in such a fashion that the pixels (11) have a contour in the form of an essentially octagonal contour.–

–17. The liquid crystal display as claimed in claim 16, wherein the electrodes are configured in such fashion that the pixels (11) have a contour in the form of a polygon with rounded corners.–

-18. The liquid crystal display as claimed in claim 16, wherein neighboring sides of the polygon define between them an internal angle of  $\geq 120$  degrees.-

-19. The liquid crystal display as claimed in claim 12, wherein the pixels (11) are arranged in a raster, with the raster distance between neighboring pixels amounting to between 0.6 mm and 0.8 mm.-

### REMARKS

Various amendments have been made to the claims to bring them in conformance with U.S. patent practice. No new matter is presented.

An early action on the merits would be greatly appreciated.

Respectfully submitted,



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### CERTIFICATE OF MAILING OR TRANSMISSION – 37 CFR 1.8

I hereby certify that I have a reasonable basis that this paper, along with any referred to above, (i) are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, or (ii) are being transmitted to the U.S. Patent & Trademark Office in accordance with 37 CFR § 1.6(d).

DATE: August 14, 2001

NAME: Anthony Aviat

SIGNATURE: Anthony Aviat

## APPENDIX SHOWING MARK-UPS OF AMENDMENTS

1. A liquid crystal display having two opposed substrates (1), a liquid crystalline medium (2) contained between the substrates, and a plurality of electrodes (5) arranged on the substrates to produce a multiplicity of pixels (11), [characterized in that] wherein the electrodes (5) are configured in such fashion that the pixels (11) have round contours.

2. The liquid crystal display as claimed in [the preceding] claim 1, wherein the electrodes (5) are configured in such fashion that the pixels (11) have roughly circular contours.

3. The liquid crystal display as claimed in [any one of the preceding claims] claim 1, wherein the electrodes (5) possess bulging sections (6) with a rounded, [in particular circular-segmental,] outer contour, as well as connecting sections (9) linking said bulging sections in a string-type configuration, with the relative orientation of the electrodes (5) disposed on different substrates (1) being such that their bulging sections (6) lie opposite each other, [being in particular] turned through about 90° relative to one another, and adding up to form a pixel.

4. The liquid crystal display as claimed in claim 3, wherein the bulging sections (6) form diametrically opposed sectors (7), [particularly circular sectors,] with a sector angle ( $\alpha$ ) of at least about 90 degrees[, preferably about 90 degrees].

5. The liquid crystal display as claimed in [anyone of the preceding claims, characterized in that] claim 1, wherein the bulging sections (6) of the electrodes (11) which are complementary to form pixels (11) are configured in such fashion that in the presence of an offset of the substrates (1) in the two axial directions, which is due to manufacturing tolerances, pixels (11) are still producible whose outer contour includes circular sections and corners with obtuse included internal angles.



preferably between 0.6 mm and 0.8 mm, being in particular of the order of about 0.7 mm].

Cancel claim 13.

FOR THE CAUSE